

## TECHNICAL SHEET

### Techniques for rapid multiplication of pineapple shoots by fragmentation of the material

#### Cultivation of pineapple with rejects (Bidima, 2007)

To cultivate pineapples intensively, one is sometimes confronted with practical difficulties: to gather enough shoots, to transport them to the production site, to ensure that the sanitary conditions are met. For all these reasons, it is advisable to prepare the multiplication of its own rejects on site. There are several methods of propagation of shoots among which:

- The method by direct maintenance of the stocks after the harvest of the fruits;
  - The method by fragmentation of the plant material;
- The method by in vitro multiplication (which can be practiced only in laboratory by specialists, and with an adequate material).

#### Pineapple and his different parts

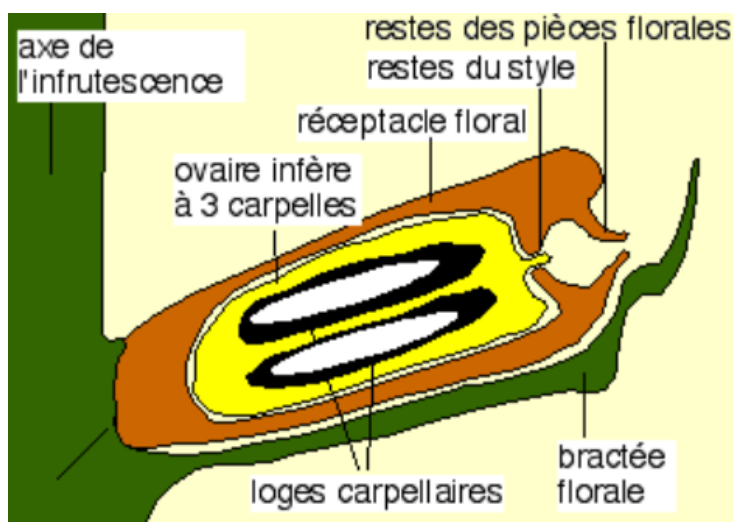
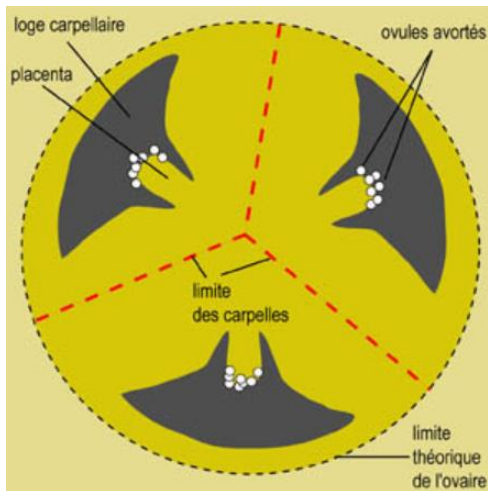


Figure 1 : longitudinal section of a pineapple (source : <http://www.snv.jussieu.fr/bmedia/Fruits/ananas.htm>)



**Figure 2 :** tangential cut of a pineapple (source : <http://www.snv.jussieu.fr/bmedia/Fruits/ananas.htm>)

### Types of rejects (Bidima, 2007)

- There are at least 5 types of shoots:
- **The crown:** which is at the top of the fruit in a dormant state that, once planted, resumes its development.
- **The cayeu of stump:** which takes origin on the underground part of the stem or on the collar of the plant. It emits roots that penetrate the soil and generally has longer leaves. This basic cayeu is often called "scion" or "sucker".
- **The bulblet:** which originates at the base of the fruit. It develops from an axillary bud of the peduncle. After the harvest of the fruit, its development stops and it falls on the ground. Sometimes, crown bulblets are born in the axil of the crown. The bulblet constitutes the best plant material for the multiplication of the pineapple because it ensures a very regular cycle. But it is rare: 1 by foot in general.
- **The Hape:** which is an intermediate rejection between the cayeu and the bulbil. It develops from axillary bud, located at the junction of the stem and the peduncle of the fruit.
- **The cayeu of stem:** which develops from the axillary bud of the stem. Its terminal bud is similar to the stem. It is him which ensures the second harvest on the same foot. Its base has the typical aspect of a duck's beak. The cayeu is the most commonly used plant material in industrial crops.

### Direct stump maintenance (Bidima, 2007)

This method consists of maintaining the stumps in place, after harvesting the fruit. The plot must be kept clean and aerated to allow the stump to grow.

- After harvest, let the stump rest for a few days;

- Prune the leaves in order to reduce the surface of nutrient consumption by the stump, which accelerates its development;
- Regularly weed the plot in order to aerate the stumps and reduce the humidity of the plot;
- Spray a mixture of insecticide and fungicide (Dursban+Benlate) after three weeks;
- Pour 5g of urea per stump every 3 months;
- Harvest every month the mature shoots that you can plant.

You can thus maintain your stumps for 18 months, and you will harvest 4 to 5 times on each stump, that is 4 to 5 shoots per stump.

### **Fragmentation of plant material** (Bidima, 2007)

When an ananeraï is to be established over a large area, a very large number of shoots are often needed at a time. The technique of fragmenting the plant material after harvesting the fruit gives very good results. This technique allows you to retain all the characteristics of the mother plant. It is best to use stems that have already produced fruit.

How is this done?

- Dig up the fresh stumps (stems), and cut off all the leaves at their base. You will obtain a cylindrical stem.
- Cut the stems lengthwise, so as to obtain several fragments (you can also cut them in fragments of 3 to 4 cm.)
- Disinfect the fragments obtained by soaking them entirely in a solution with a fungicide (Ridomil+; 1 sachet in 5 liters of water)
- Make a 15 cm high board with black and rich soil, on which you dig parallel furrows 5 cm apart, inside which the fragments are planted
- Place the fragments end to end and flat in the furrows, at intervals of 15 cm
- Make sure that the cut side is facing the ground, which will facilitate the evolution of the roots.
- Cover with a thin layer of soil (1 cm) and make a light mulch
- Water once every 3 days. After 3 weeks, each fragment will have budded on the upper side and 2 months later, your young seedlings will have reached 4 to 5 cm high. Make a nursery of one or several 15 to 20 cm high boards, with a shade.
- Subdivide the stem fragments into as many pieces as there are buds.
- Then make holes 5cm deep by hand or with a planter, with a spacing of 15cm x 15cm (44 plants per m<sup>2</sup>) or 25cm x 10 cm (40 plants per m<sup>2</sup>).
- Treat the buds in a fungicide solution before placing them in the pots.

- Pack lightly around the collar and then water abundantly every day. For one hectare of field, plan for 50,000 to 60,000 plants, which requires a nursery of about 1,500 m<sup>2</sup>; the shoots will be ready to be transplanted into the field after 11 months in the nursery, unlike the stump maintenance method which produces every quarter. But it has the advantage of giving homogeneous shoots and in important quantity.

### **Characteristic of the technology**

2 discharges/plt at normal; 18 discharges/fragmentation or >200% increase.

### **Bibliographic references**

Bidima (2007) : Culture de l'ananas : Multiplication et conditionnement des rejets ; 6p.

Py (1955) (1955) : Les différents types de rejets d'Ananas ; Article de revue ; 25-45p.

### **Web sites consulted**

[document\\_457359.pdf \(cirad.fr\)](#) ; 18/02/2022 at 10h00

[Culture de l'ananas : Multiplication et conditionnement des rejets \(laboress-afrique.org\)](#) ; 18/02/2022 at 10h09

### **Other references**

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